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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,730	06/13/2005	Olivier Guerret	FR-AM1907 NP	6786

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ARKEMA INC.  
PATENT DEPARTMENT - 26TH FLOOR  
2000 MARKET STREET  
PHILADELPHIA, PA 19103-3222

EXAMINER
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BERNSHTEYN, MICHAEL

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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10/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/538,730

Applicant(s)

GUERRET, OLIVIER

Examiner

Michael Bernshteyn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 9 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/13/2005</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites "an average masses". It is not clear, what does it mean: a weight-average molecular weight or a number-average molecular weight?

Appropriate correction is required.

### ***Claim Objections***

2. Claims 5, 6, 9 and 13 are objected to because of the following informalities:

Regarding claim 5, the phrase "such as" renders the claim unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 6: it should be comma after the words "polyethylene glycol acrylate".

Claim 9, line 2: the word "advantageously" should be deleted.

Claim 13 should be re-written according the following: "A paint, adhesive, glue or cosmetic formulation comprising the gradient copolymer of claim 1".

Appropriate correction is required.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

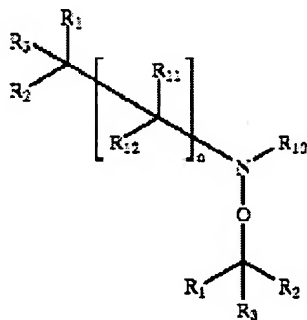
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

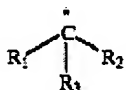
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-11, 13 and 17-20 are rejected under 35 U.S.C. 103b) as being unpatentable as obvious over Nesvadba et al. (U. S. Patent 6,262,206).

With regard to the limitations of claims 1, 2, 8-10 and 17-18, Nesvadba discloses a polymerizable composition, comprising a) at least one ethylenically unsaturated monomer or oligomer, and b) an initiator compound of formula (I)

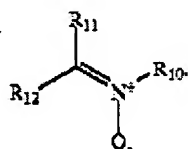
(I)



wherein n is 0 or 1. The compounds of formula (I) are prepared from a free radical



and a compound of formula R<sub>10</sub> NO or



Nesvadba discloses a process for polymerizing ethylenically unsaturated monomers, novel initiator compounds and their use for polymerization, intermediate compounds and also the polymer or copolymer produced by this process (abstract).

Nesvadba discloses that block copolymers are, for example, block copolymers of polystyrene and polyacrylate (e.g., poly(styrene-co-acrylate) or poly(styrene-co-acrylate-co-styrene). They are usefull as adhesives or as compatibilizers for polymer blends or as polymer toughening agents. Poly(methylmethacrylate-co-acrylate) diblock copolymers or Poly(methylacrylate-co- acrylate-co-methacrylate) triblock copolymers) are useful as dispersing agents for coating systems, as coating additives (e.g. rheological agents, compatibilizers, reactive diluents) or as resin component in coatings(e.g. high solid paints) Block copolymers of styrene, (meth)acrylates and/or acrylonitrile are useful plastics, elastomers and adhesives (col. 12, lines 22-33).

With regard to the limitations of claims 1, 2 and 17-18, Nesvadba does not disclose the specific values for the range of T<sub>g1</sub> and T<sub>g2</sub>.

However, in view of substantially identical composition between Nesvadba and instantly claimed gradient copolymer (exactly the same polymerized monomers, agent for controlling polymerization nitroxide and alkylamide, the same polymerization initiators, number average molecular weight of the final copolymers being obtained by the same method of free radical polymerization, etc.), it is the examiner position that Nesvadba's composition possesses these properties. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. **In re Best** 195 USPQ 430, (CCPA 1977).

With regard to the limitations of claims 1 and 7, Nesvadba does not disclose the amount of hydrophilic monomers in the mixture.

It is noted that the amount of the weight ratio of the components A and B is a result effective variable, and therefore, it is within the skill of those skilled in the art to find the optimum value of a result effective variable, as per **In re Boesch and Slaney** 205 USPQ 215 (CCPA 1980). See also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382: "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."

With regard to the limitations of claims 3 and 19, Nesvadba discloses that the (co)polymers may have a number average molecular weight from 1 000 to 400 000 g/mol, preferably from 2 000 to 250 000 g/mol and, more preferably, from 2 000 to 200 000 g/mol. When produced in bulk, the number average molecular weight may be up to

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500 000 (with the same minimum weights as mentioned above), which is within the claimed range (col. 12, lines 39-45).

The (co)polymers typically have a low polydispersity. Preferably the polydispersity is from 1.1 to 2.2, more preferably from 1.1 to 1.9 and most preferably from 1.2 to 1.8, which is within the claimed range (col. 12, lines 52-55).

With regard to the limitations of claims 5 and 6, Nesvadba discloses that typical monoethylenically unsaturated monomers include the alkyl esters of acrylic or methacrylic acids such as methyl acrylate, ethyl acrylate, butyl acrylate, methyl methacrylate, ethyl methacrylate, butyl methacrylate and isobutyl methacrylate; the hydroxyalkyl esters of acrylic or methacrylic acids, such as hydroxyethyl acrylate, hydroxypropyl acrylate, hydroxyethyl methacrylate, and hydroxypropyl methacrylate; acrylamide, methacrylamide, N-tertiary butylacrylamide, N-methylacrylamide, N,N-dimethylacrylamide, etc. (col. 6, lines 32-49).

Examples of comonomers C<sub>3</sub> –C<sub>6</sub> ethylenically unsaturated monocarboxylic acids as well as the alkali metal salts and ammonium salts thereof. The C<sub>3</sub> –C<sub>6</sub> ethylenically unsaturated monocarboxylic acids include acrylic acid, methacrylic acid, crotonic acid, vinylacetic acid and acryloxypropionic acid. Acrylic acid and methacrylic acid are the preferred monoethylenically unsaturated monocarboxylic acid monomers (col. 7, lines 21-28).

With regard to the limitations of claims 4, 7 and 11, Nesvadba discloses a free radical polymerization process and polymers obtained thereby. The process may be carried out in the presence of an organic solvent or in the presence of water or in

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mixtures of organic solvents and water. Additional cosolvents or surfactants, such as glycols or ammonium salts of fatty acids, may be present. The initiator compound is preferably present in an amount of 0.01 mol-% to 30 mol-%. When monomer mixtures or monomer/oligomer mixtures are used, the calculation of mol-% is based on an average molecular weight of the mixture. After the polymerizing step is complete, the formed (co)polymer obtained is isolated. The isolating step of the present process is conducted by known procedures, e.g. by distilling off the unreacted monomer or by precipitation in a suitable nonsolvent, filtering the precipitated polymer followed by washing and drying the polymer (col. 9, line 30 through col. 11, line 5).

With regard to the limitations of claim 13, Nesvadba discloses that the obtained resin products are useful in many applications, including a variety of specialty applications, such as for the preparation of block copolymers which are useful as compatibilizing agents for polymer blends, or dispersing agents for coating systems or for the preparation of narrow molecular weight resins or oligomers for use in coating technologies and thermoplastic films or as toner resins and liquid immersion development ink resins or ink additives used for electrophotographic imaging processes (col. 2, lines 40-50).

With regard to the limitations of claim 20, Nesvadba discloses that the polymerization temperature may range preferably from about 80°C to about 150°C, which is mainly within the claimed range (col. 10, lines 52-54).

**Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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09/28/2007

  
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